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ABSTRACT

Proposing that most studies of nonverbal intimacy regulation have inadequately tested the compensation model (changes in any component of intimacy necessitate compensating changes in other components to maintain an equilibrium), this paper examines the nature of methodological problems in such studies and offers three suggestions for improved research of the compensation model. The methodological problems are discussed under two main categories: the control of extraneous variables and the selection of an appropriate research paradigm. The three methodological requirements that are proposed for adequate investigation of intimacy regulation are (1) that actual interactions be studied, (2) that each subject experience a change in intimacy, and (3) that special care be exercised if confederates are used to introduce changes in nonverbal intimacy. Suggestions are offered for future research in the study of intimacy regulation, including the use of representative designs, ethnomethodological techniques, and microkinesic analysis. (RL)

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Regulation of Nonverbal Intimacy: Searching for An Adequate Methodology

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In what has proved to be a heuristically important contribution to the study of nonverbal intimacy, Argyle and Dean (1965) demonstrated that eye contact is related to interaction distance. As distance increases, the amount of time that a subject looks at the eyes of a constantly gazing confederate also increases. These findings have proved to be fairly reliable (e.g. Goldberg, Kiesler, & Collins, 1969; Knight, Langmeyer, & Lundgren, 1973). In each of these studies the subjects interacted with a confederate or interviewer at more than one distance. Several other studies in which subjects interacted at only one distance (e.g. Aiello, 1972; Stephenson, Rutter, & Dore, 1973) also indicate that subjects look more at a distant than at a near co-interactant.

Argyle and Dean (1965) explained their findings by postulating an approach -avoidance equilibrium for the intimacy level of any given encounter. They reasoned that if one of the components of intimacy, such as eye contact or distance, deviated enough to upset the equilibrium for intimacy, a compensating change would occur in the interactant's nonverbal behavior to restore the intimacy level of the encounter to the equilibrium level.

Other evidence indicates that changes in nonverbal intimacy may produce reciprocal as well as compensatory adjustments. For example, Breed (1972) found that greater intimacy on the part of a confederate resulted in increased eye contact, contrary to the prediction of the compensation model that one person's attempts to increase the intimacy of the encounter would result in intimacy reduction by the other. Jourard and Friedman (1970) found reciprocal changes in self-disclosure. A few other studies failed to find either reciprocal or compensatory changes (e.g. Coutts & Schneider, 1976).

Several writers (e.g. Bakken, 1978; Kaplan, 1975; Patterson, 1976) have offered explanations for the apparent inconsistency in the empirical findings. In the present paper, I am going to focus on some methodological issues that are related to this lack of consistency.

A Schema for Categorizing Research on Intimacy Regulation

Beginning with Argyle and Dean's (1965) initial experiments, at least three research strategies have been employed in investigations of the compensation hypothesis. These are: simulated interaction, in which the subject interacts with an imaginary or symbolic other; contrived interaction between a subject and a confederate; and naturalistic interaction between two naive subjects. Within these three strategies, both between- and within-subjects designs have been used. A summary of these strategies and designs, along with studies representative of each, is presented in Table 1.

A second means of classification can be developed on the basis of the dependent and independent variables used in each study. Some studies, for example, have used distance as the independent variable and eye contact as the dependent variable, while others have reversed this arrangement. Other studies have manipulated interpersonal attraction and used intimacy as the dependent measure. A summary of the various combinations of independent and dependent variables used in representative studies is presented in Table 2.

The Nature of Methodological Problems

Even though this is not a research report, I feel that at least one hypothesis is in order. I am going to hypothesize that there are only two kinds of methodological problems. A methodology invariably advances when these two problems are solved. The first problem is the control of extraneous variability. In social psychology, at least, much research is generated in the search for uncontrolled variables which might have plagued someone else's research. A notable example of the heuristic value of an artifact can be found in Rosenthal's work on experimenter expectancy effects.

The second problem to be solved is the problem of a paradigm. In this post-Kuhnian era in which we live, paradigm has come to mean a great many different things, but I have chosen one of Kuhn's (1970) definitions. By paradigm, I mean the basic approach to answering a particular research question. I believe that this problem includes the more specific problem of conceptualization. When a question is properly conceptualized, it is likely to be followed by an appropriate paradigm. The solution to the paradigm problem can be something as simple as choosing between naturalistic observation or a controlled experiment. I do not wish to imply that there is only one such solution to any research question. Rather, I wish to suggest that only some solutions are appropriate for any given question, and others are inappropriate. Within a paradigm, of course, many different operationalizations may be used.

The Control of Extraneous Variables

There have undoubtedly been numerous examples of the first type of problem, uncontrolled extraneous variables, in the existing research on intimacy regulation. I will briefly mention two of these--the first, because it generated a number of studies, and the second because it seems so obvious that we might expect that every researcher studying eye contact would take it into account.

Methodological artifact when eye contact is the dependent variable. In the Argyle and Dean (1965) experiment, as the distance between the subject and the confederate increased, the distance between the subject and the observer also increased. Stephenson and Rutter (1970) proposed that the observed differences in eye contact at different distances might be due to the fact that as observer-to-subject distance is increased, the observers may be less able to discriminate actual gaze direction, leading to an overestimation of the amount of eye contact at greater distances. They conducted an experiment using Argyle and Dean's

procedure, but they had the observers watch the confederate rather than the naive subject. The confederate's gaze was programmed. He looked for one minute at the subject's eyes, one minute at one of his ears, and one minute at one of the subject's shoulders. They found that reported eye-contact increased as the observer-confederate distance increased, even though actual eye contact remained constant across the three different distances. They concluded that, at greater interaction distances, observers are less able to discriminate eye-gazes from gazes directed at nearby parts of the body. Knight, Langmeyer and Lundgren (1973) also conducted experiments to test for methodological artifacts in eye contact/interpersonal distance studies. They replicated the experiment by Argyle and Dean except that they held the distance between the observer and the naive subject constant. They found that observers reported an increase in eye contact as interaction distance increased, suggesting that the effect is not due to an inability to discriminate looking. They suggest, however, that there may be an observer expectation bias, so that observers expect that there will be an increase in eye contact at greater interaction distances. They duplicated this experiment, having the observer watch a confederate whose gaze was programmed. Once again, the observers reported an increase in eye contact with increasing interaction distance, even though actual eye contact was held constant over all distances.

Argyle (1970) and others (Patterson, 1975; Vine, 1971) have responded to the suggestion of this artifact by arguing that in natural interaction there is seldom any need to make fine discriminations in gaze direction. People either look into one another's eyes or they look obviously away, so the contrived gaze of the confederate in these studies may itself have created an artifact. Vine (1971) reports that interrater reliability for judgments of gaze was much higher when observers were looking at films of naturalistic interaction than when they were looking at films of confederates engaged in programmed looking. Happily, Stephenson, Rutter and Dore (1973) devised a technique which eliminates both observer-subject differences and observer expectations as sources of variability. In this technique, each subject is videotaped separately with a zoom lens, so that image size can be kept constant. The interaction is recorded on a split-image recorder, so that information about actual distance is concealed from the observer. Finally, the technique permits determination of the actual amount of eye contact, since the observers can determine the gaze patterns of both interactants. In other studies, eye contact was inferred from the behavior of only one interactant.

Speaker-listener differences in gaze. The second artifact that I want to mention arises from speaker-listener differences in gaze. Kendon (1967) reports that, for white, western interactants, the listener tends to look at the face of the speaker, while the speaker looks away. Any observed differences in gaze, therefore, may be due to differences in the amount of time spent in either the speaker or listener role. As an example of the difficulty that can be caused by failure to control for these normative patterns in gaze, Crouch and Koll (1979) operationalized dominance in terms of the proportion of gaze breaks. The more gaze breaks an interactant made, the less

dominant he or she was presumed to be, relative to the other interactant. This measure of dominance is confounded with the speaker-listener gaze pattern, since speakers are more likely to make gaze breaks than listeners. Crouch and Koll in fact found that the gaze-break measure of dominance was inversely related to the ratings of dominance made by the interactants themselves.

This artifact can be controlled by keeping speaker-listener roles constant across various experimental treatments or, more simply, including speaker-listeners roles as an independent variable, by measuring the time spent in each role as well as the amount of gaze that occurs while speaking versus the amount of gaze that occurs while listening. A number of researchers have done just that, but just as many have failed to take speaker-listener differences in gaze into account.

Finding the Appropriate Paradigm

As I mentioned above, the problem of finding a paradigm is related to the problem of conceptualization. The compensation process in intimacy regulation can be likened to a homeostatic or regulatory mechanism. If we conceptualize a social encounter as a system consisting in part of a set of relationships between those behaviors which determine the nonverbal intimacy of the encounter, we can see that in a compensation model the relationships remain constant. The concept of compensation is not unlike the concept of the invariant in perceptual psychophysics. If one of the individual components changes, some other component will also change in order to maintain the overall relationship between the components. In reciprocity processes, in contrast to compensation, the set of relationships which remain constant involves each individual's inputs into the encounter.

This conceptualization of social encounters in general and compensation and reciprocity in particular would seem to make at least three features necessary if our paradigm is going to adequately deomonstrate that behavioral differences in intimacy are due to either compensation or reciprocity. These three features are 1) the study of actual interactions; 2) within-subjects designs; and 3) avoidance of confederates if at all possible.

The study of actual interactions. Actual interactions should be studied because simulations, in which subjects verbally indicate what they would do (e.g. Cook, 1970; Sommer, 1969) or interaction with an imagined or symbolic other (e.g. Mehrabian, 1968), are insufficient to demonstrate compensation and reciprocity. Compensation and reciprocity occur as part of the stream of behavior; these changes are responses to something and not isolated events in themselves. Additionally, both the "stimulus" and the "response" may lie out of the subject's awareness, so these strategies may lack ecological validity on two counts.

Within-subject designs. Since both compensation and reciprocity are regulatory responses, subjects need to experience some change or disruption in the immediacy or intimacy of an encounter if either compensation or reciprocity is to occur. Testing each subject at only

one interaction distance, for example, seems an ins fficient basis for concluding that differences in the dependent variable (e.g. eye contact) are due either to compensation or reciprocity. Differences in nonverbal intimacy in experiments where subjects experience only one level of the independent variable may be attributable to other characteristics of the situation. As an example of the type of effect that may go undetected, Argyle and Dean (1965) found that eye contact tended to be anchored by initial interaction distance, so that subjects who interacted first at the closest distance looked less at each distance than subjects who first interacted at the farthest distance. Within-subjects designs have been employed in only a few studies (e.g. Argyle & Dean, 1965; Coutts & Schneider, 1976); such designs necessitate more elaborate procedures for implementing the different levels of the independent variables and counterbalancing order of presentation.

In general, when we want to know if some factor, such as distance, is related to some behavior, such as eye contact, it is sufficient to use a between-subjects design to demonstrate that a relation exists. If, however, we are attempting to show that that relation is mediated by some homeostatic or regulatory mechanism, it seems that simple mean differences between groups do not rule out competing hypotheses. A within-subjects design wherein subjects experience a change in the independent variable and their reactions are studied is a more powerful design for demonstrating regulatory changes in intimacy.

Avoiding the use of confederates. The third desired feature in our intimacy regulation paradigm is probably the hardest to achieve. Both within-subjects and between-subjects differences in experienced intimacy have frequently been created by the use of confederates, as can be seen in Table 1. In such cases, some aspect of the confederate's behavior has been programmed or predetermined by the experimenter. The confederate may be asked to stand at a certain distance from the subject or engage in a specified amount of eye contact. This may create problems in at least two ways. First, most nonverbal behaviors have functions in addition to regulating the intimacy of the encounter. As noted above, gaze is different for speakers and listeners, and plays an important role in regulating the flow of conversation (Kendon, 1967). Any overt change in the amount of pattern of gaze (e.g. a constantly gazing confederate) may interfere with the other functions of that behavior, and any differences in the subject's behavior might be in response to that disruption rather than to the change in intimacy. A second problem stems from the potential inability of the confederates to deviate from what are usually overlearned patterns of behavior without in some way compensating in other aspects of their behavior. The confedrate's nonverbal behavior should be monitored to detect any such biases that might occur.

In terms of the conceptualization of a social encounter presented above, both of these problems lead to disruption of the system of relationships between nonverbal intimacy cues. Where the use of confederates is necessary, it may be desirable to avoid using the confederates to implement the different levels of the independent variables.

The role of the confederate then becomes one of control rather than manipulation. The confederate controls for variables such as physical attractiveness, age, and other individual differences in the stimulus person.

Suggestions for Future Research

In addition to these characteristics of an "adequate" paradigm, at least three additional features might add to our understanding of intimacy regulation in social encounters. Since Argyle and Dean (1965) proposed that compensation might occur in any of several nonverbal components of intimacy, it seems presumptive to limit the dependent variables to one or perhaps two of the possible components of nonverbal nonverbal intimacy. Although broadening the range of dependent variables may increase the complexity of the experiment, such an approach would reduce the likelihood that negative results or findings of no difference occurred becuase the regulatory changes were in some other behavior and at the same time enable us to learn something about the relative weights of the various components of intimacy. As an example, in an experiment in which the independent variables were attraction (via attitude similarity) and sex of interactants (Bakken, 1979), I found that eye contact and distance were completely determined by the sex of the interactants. Differences in the expression of attraction emerged only in more subtle measures such as the number of reciprocal changes in shoulder orientation or the number of changes in shoulder orientation toward greater immediacy.

A second desired characteristic is the use of ethnomethodological techniques or microkinesic analysis to uncover the subtle relations between intimacy components as well as the patterning of regulatory and other changes in nonverbal intimacy. Such techniques may provide new data for generating hypotheses about the role of intimacy in social encounters.

Finally, the relation between intimacy and other factors surrounding the interaction, such as the purpose of the encounter, the relationship between the participants, and other "cognitive social psychological" variables such as attitude similarity might be studied. The relationship of social perception and attribution processes to nonverbal intimacy is also under-investigated. Recent research by myself (Bakken, 1979) and Storms and Thomas (1977) indicates that subjects' perceptions of the other interact with and may influence nonverbal immediacy and intimacy. More extensive exploration of other factors related to the expression and regulation of intimacy will undoubtedly broaden the base for predicting the nature of changes in intimacy over the course of social interaction.

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Table 1

Summary of Research Strategies and Designs

and Representative Studies

	Research Design	
Research Strategy	Within Ss	Between Ss
Simulated Interaction	Argyle & Dean (1965) Mehrabian (1968)	
Contrived Interaction	Argyle & Dean (1965) Goldberg, et al (1969) Knight, et al. (1973) Hobson, et al. (1973) Savicki (1971)	Aiello (1972) Jourard & Friedman (1970) Breed (1972) McDowell (1973) Efran (1970) Tesch et al. (1973)
Naturalistic Interaction	Coutts & Schneider (1976)	Bakken (1979) Gardin et al. (1973) Stephenson et al. (1973)

Table 2

Summary of Independent and Dependent Variables

Study	Independent Variables	Dependent Variables
Aiello (1972)	Distance, shoulder orientation	Eye contact
Argyle & Dean (1965)	Eye contact (I) Distance (II)	Distance Eye contact
Bakken (1979)	Attitude Similarity, sex	Eye contact, distance, orientation, self-disclosure
Breed (1972)	Body posture and search for eye contact	Eye contact, attitude
Efran (1970)	Interpersonal attraction	Eye contact
Gardin, et al. (1973)	Proximity and eye contact	Cooperation, attitude, and approach-avoidance
Hobson, et al. (1973)	Change in anxiety level	Eye contact
Jourard & Friedman (1970)	Distance, eye contact, touch	Self-disclosure
Savicki (1971)	Confederate's self-disclosure strategy	Subject's disclosure, distance
Tesch, Huston, & Indenbaum (1973)	Attitude similarity	Distance